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ABSTRACT

Based on a review of current literature, this report provides information on the impact of heterogeneous grouping versus homogeneous grouping on secondary student performance. Following a definition of ability grouping and arguments for and against its employment in current educational practice, the document examines five significant factors influenced by grouping: (1) achievement and how it is measured; (2) the effect of heterogeneous and homogeneous grouping on students' self-concept; (3) expectancies and attitudes, defined as the hopes and ideas brought into a classroom by both students and teachers on how well they will succeed and how much they will learn; (4) the influence of socioeconomic status on ability grouping; and (5) opportunities for learning, equated with equal access to quality education. Results of the review suggest that ability grouping is not necessarily harmful, but the practice unsupported by an overall educational purpose can lead to unclear effects on student educational outcomes, and that any school seeking to re-evaluate grouping systems should take into consideration student body composition, the purpose of ability group placement, and the desired educational outcomes. (26 references) (LL)

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What is the impact of heterogeneous grouping versus homogeneous grouping on secondary school student performance?

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Technical Report Submitted to the Morgan School
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December, 1991

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Introduction

This paper was undertaken to provide The Morgan School of Clinton, Connecticut, with information on the impact of heterogeneous grouping on student performance at the high school level. We limited our research to studies and articles that have been conducted within the last ten years in order to retrieve information that is current and is as close to the problems and challenges The Morgan School encounters daily. Because of the scarce number of studies focusing on ninth through twelfth grade students, we decided to include studies examining younger students.

In reviewing the current literature on ability grouping, we asked the question, "What is the impact of heterogeneous grouping versus homogeneous grouping on secondary student performance?" What follows is the results of our literature findings in light of our problem statement.

For this report, we will first define ability grouping and describe the arguments for and against its employment in current educational practices. Then we will look closer at five prominent effects found from our review of the literature which have an impact on student performance. These issues are achievement, self-concept, expectancies and attitudes, socioeconomic maintenance and opportunities for learning. Finally, our paper finishes with conclusions and recommendations.

What is Ability Grouping?

Ability grouping is "defined as any school or classroom organization plan which is intended to reduce the heterogeneity of instructional grouping" (Gamoran, 1990, p.1). Students are divided according to their abilities into levels, for example, high-achievers, middle-achievers or low-achievers. As a function of instruction, ability grouping is predominantly employed at the secondary education level (Newfield & McEylea, 1983).

There are two basic ability grouping practices employed by most schools, between-class grouping and within-class grouping. Between-class grouping is employed to diminish the difference or the heterogeneity of each class for each subject. For example, typical between-class groupings for math are: basic geometry, geometry and honors geometry, representing low, average and high level ability groups respectively (Gamoran, 1990). Tracking is used almost synonymously with between-class grouping even though, officially it may refer primarily to instructional "tracks" of college, general and vocational preparation. Grouping which occurs within a class or section is referred to as within-class grouping. In this type of classroom, small groups of high, medium and low ability students are formed. Within-class grouping requires that a teacher prepare separate instruction for teaching all ability levels rather than just one.

An exact procedure for ability group assignment does not officially exist and its practice varies from school to school. Generally, ability group assignments are based on a combination of achievement, I.Q. tests and teacher judgment (Gamoran, 1990).

Mixed Support for Ability Grouping

Most schools group students based on the following four reasons. First, it is believed that students learn better when grouped with those who are academically similar. Our brighter students, we think, might be held back in mixed groups. The needs of slower, less-abled students could be over-looked in mixed groups, while their learning deficiencies are more easily remediated in special classes (Lake, 1988; Oakes, 1985).

The second argument contends that more positive attitudes may be developed in slower students through tracking when they are not placed in daily contact with more academically capable students. In mixed groups, less capable students might unfairly compare their achievements and progress with those who are more capable. When this occurs, inaccurate judgments of their progress result (Lake, 1988; Oakes, 1985). This argument also holds for teachers who might unfairly compare unlike students in heterogeneous classrooms.

Third, placement processes accurately reflect a students' past achievement, native abilities and career aspirations. Tracking is seen as a meritocratic system which rewards and assigns students by what they have earned (Lake, 1988; Oakes, 1985).

Lastly, teaching is easier when students are grouped homogeneously because there are no slow learners to lower the learning ability denominator (Lake, 1988: Oakes, 1985).

Despite the arguments for ability grouping, recent concerns have focused on its pitfalls. First, research has demonstrated that homogeneous grouping does not consistently benefit anyone. Second, isolation from better students does not help the self-concept of the students who are assigned to the lower tracks. Along with lower self-concept levels, low-track students exhibit lower participation levels, higher incidents of misconduct and more negative attitudes towards their school. Third, what decides where each student is placed is largely dictated by their school system aided by test scores, post placements and academic self-concept, but not attending to the personal interest and aspirations of the students (Lake, 1988; Oakes, 1985).

The last argument against the practice of ability grouping and tracking is this: it is difficult to move between ability levels or tracks once students have been placed in them.

Though ability grouping is widely employed by schools across the country, it is a very controversial subject. The

controversy of ability grouping stems from the scarcity of evidence of how secondary students learn best. Do they learn best in homogeneous groups? Can students' educational needs be best served in groups of mixed abilities? It is the dimensions of these questions that we will explore in this paper.

Before continuing, a few definitions need to be clarified. These definitions pertain to the structural dimensions of ability grouping or tracking practice. These aspects are electivity, selectivity, inclusiveness and scope.

Electivity is the extent to which students choose or are assigned to track positions. Students and their parents are urged by educators to make the "right" choice according to their capacities. Curiously, Gamoran showed that the more elective a system, the higher were its students' achievement levels (Gamoran, 1990).

Selectivity is the extent of homogeneity within tracks. It is the amount of homogeneity educators intend to create by dividing students into groups according to characteristics for learning. The more selective a system is, the more the organization of its students do not represent the composition of its whole student body and the more between-class differences are accentuated (Gamoran, 1990).

Inclusiveness is the availability of options for

subsequent educational opportunities (Gamoran, 1990). In other words, does the instruction a student receives prepare him/her for the further acquisition of knowledge down the road, or does it cut the student off from other options.

Finally, scope is the breadth and flexibility of a tracking assignment; the extent to which students are located in the same track across their subjects (Gamoran, 1990).

Now armed with a few key terms and background information, we will look at the issues concerning the impact of ability grouping on secondary students. The first issue to be examined is achievement.

Significant Factors Influenced by Grouping

Achievement

The first question to be answered in this section is: What is achievement and how is it measured? For our discussion, we will define achievement as the successful attainment of skills. There are various ways in which achievement can be measured. Most commonly used in the studies included in our research are achievement tests and/or grades on report cards. Both measurements allow for a comparison of skills among students. The following is a description of the studies used in this section and their findings.

Reuman's 1989 study tried to answer the question of whether or not social comparisons mediate the relation between ability grouping and students' achievement expectancies in math. While his study primarily included information on student expectations of their achievement, results concerning actual achievement were also stated. Math achievement was measured for sixth-graders from a suburban public school district in Southeastern Michigan using both achievement test scores and report card grades. His findings pertained to within-class and between-class ability grouping. He found that within-class grouping raised high-achievers' math grades, but lowered low-achievers' math grades. This may be explained by the fact that in a heterogeneous classroom using within-class grouping, students of varying abilities were being compared to each other. In within-class grouping the high-achievers were not in competition with all high-achieving students. Their grades were being compared with the grades of average and low-achieving students and would therefore be higher. Conversely, low-achievers' grades would be lower. The opposite was true for between-class ability grouping. Reuman found that high achievers received lower grades in between-class grouping and the low achievers received higher grades when compared to within-class grouping. In between-class grouping the high achievers are no longer at the top of their class nor are the low achievers at the

bottom. They are now being compared to students of similar abilities and their grades reflect that fact. Although Reuman's study did not focus on secondary students, we thought it practical to include this report since it does compare and contrast within-class and between-class ability grouping and there is a growing trend towards moving the sixth-grade into the middle schools.

Newfield and McElyea (1983) looked at sophomore and senior achievement differences in remedial and advanced math and English classes as they compared to heterogeneous classes. Heterogeneous classes that included low-achievers performed better on the written portion of the English test. Low-achieving seniors and sophomores in the heterogeneous classes showed higher math achievement. However, homogeneous-grouped classes of high-achieving sophomores and seniors in advanced classes exhibited greater achievement in both math and English. No significant differences were found beyond these results.

Regarding the effects of ability grouping on within-class achievement, Sorenson and Hallinan's study (1986) found that grouping increases inequality of achievement. Briefly, this study looked at the difference in reading achievement between within-class grouped students and heterogeneous classrooms for fourth through seventh graders from Northern California. Their primary result concerning achievement for within-class grouping was that high-ability groups attained a higher achievement than

low-ability groups. These results were based primarily on data from elementary schools and may not directly apply to secondary students, but this study was included in this report to add insight to the subject of homogeneous versus heterogeneous effects on achievement.

Testing the effects on the differences between math achievement of within-class ability grouping, heterogeneous and cooperative-learning grouped classrooms, Slavin and Karweit (1984) conducted two experiments. The first included fourth through sixth graders from integrated, urban, untracked schools in which the teachers were given appropriate training. The second experiment included third through fifth grade students from rural, mostly white, tracked schools with no specific teacher training. The subjects in this experiment were called the untreated, control classes. The reason for conducting both experiments was to be able to generalize the results of their study to different school situations and locations.

In the heterogeneous classes the teachers were trained to emphasize a high ratio of active teaching to seatwork. Math was taught in context of meaning, not in isolation and there were frequent questions and feedback. In these classes, teachers taught at a rapid pace and strived to increase student time on task. In the within-class ability-grouped classes, teachers were trained to teach with the same concepts as described in the heterogeneous classes,

but were instructed to differentiate their pace and materials for the two groups. In the cooperative learning classes, students worked in heterogeneous learning teams of four or five members. They worked on individualized math materials at their own levels and pace, and the team members helped one another with any problems.

Slavin and Karweit (1984) found that the results were similar for both experiments. Cooperative learning groups and within-class ability groups increased computational skills significantly more than in heterogeneous classes that had no grouping. There was a similarity in achievement effects when using the cooperative learning and within-class grouping treatments. This study showed that grouping third to sixth grade students in some way is beneficial to achievement when compared with no grouping at all. Again, this study focused on elementary school but did offer cooperative learning as an alternative to the traditional use of either homogeneous or heterogeneous classrooms.

The rest of the researchers whose articles were used in this section of our paper wrote reviews and syntheses of past research and we will now summarize their findings.

A meta-analysis (1990), conducted by Goldring, on the differences in achievement of gifted students between homogeneous and heterogeneous classes included studies spanning grades three through twelve. Goldring found that the higher the grade level, the more gifted students

benefitted from specialized or homogeneous classes. Teacher training for gifted programs directly affected student achievement. Students in special classes, whose teachers had received special training to teach gifted students, achieved more than gifted students in heterogeneous classes as compared to students in gifted classes whose teachers were not specially trained (Goldring, 1990).

Seemingly conflicting results are found in the following three studies. Kulik and Kulik's (1987) meta-analysis included many older studies dating back to the 1920's, and they too support Goldring's findings that homogeneous grouping of gifted students increased their achievement. Looking beyond gifted students to secondary students in general, Slavin conducted a synthesis of twenty-nine studies from the years 1927 - 1986. He found that between-class ability groups, dominant in secondary schools had little or no effect on achievement. He further said that different forms of grouping were equally ineffective (Slavin, 1990).

Gamoran and Berends (1987) too studied the effects of ability grouping on secondary schools and found quite the opposite. They found that ability grouping and tracking did indeed effect student achievement and that the differences between achievement may have resulted from variations in student academic experiences. (Note: the "variations" just mentioned will be clarified in the opportunities for learning section discussed later in this paper.)

Allan's critique (1991) of the inconsistencies between Kulik and Kulik's (1987) and Slavin's (1990) findings advises wariness in interpreting the reviews about ability grouping and the gifted. In both studies, achievement was measured by the use of standardized test scores. Scores of gifted students are usually high and approach a maximum possible score. As they come closer to the maximum, it is difficult for these gifted students, measured in this way, to show significant academic improvement as they already represent the upper echelon of achievement. This consequence may help to account for the differences in results of studies which examine gifted versus regularly-placed students.

Another problem with the use of the standardized tests was that they did not necessarily evaluate what teachers were teaching. Allan recommended the use of teacher-made tests when comparing student progress in homogeneous versus heterogeneous classes. Slavin included studies that used teacher-made tests, but there was a problem with his selection process. He only included studies when the teacher-made tests were designed to assess objectives taught in all classes. Generally, objectives will vary among the three ability groups of high, average and low and the only tests that would meet Slavin's criteria would be those that tested for minimal objectives. Again, this will not successfully demonstrate achievement gains for average and high ability classes.

Allan stressed that the most harmful aspect of the homogeneous versus heterogeneous controversy is the misrepresentations of researchers' findings, especially Slavin's. Some writers may look at Slavin's results and misinterpret them to support their own beliefs. An equally damaging example is that some school systems used Slavin's findings to make decisions on gifted or special education programs. In reality, Slavin did not include either group in his study. Following are the conclusions about achievement that Allan had pulled from both Kulik and Kulik's (1987) and Slavin's (1990) studies. High-ability and gifted students did benefit from some forms of homogeneous grouping, and average and low-ability students may have benefitted as well. Slavin's (1990) and Kulik and Kulik's (1987) research showed that there was no evidence to suggest that ability grouping was harmful to students academically (Allan, 1991).

In an examination of achievement, not only should the effects of ability grouping be considered but also how schools structure their tracking practices. Different types of tracking systems do have different effects on student achievement. What makes a tracking practice differ from school to school is the extent of emphasis a system places on selectivity, inclusiveness, scope and electivity.

A tracking system which exhibited a high degree of selectivity (high levels of homogeneity), the larger were

the differences in achievement between each track. Just as selectivity affected a system, so did inclusiveness. Increasing or decreasing the options for further educational opportunities, widened the gap in achievement between tracks. However, a moderately inclusive system produced smaller differences in achievement levels. Scope correlates with achievement in much the same direction as selectivity and inclusiveness. The higher the proportion of a class who are locked into the same track across all subjects, the higher are the track differences in the achievement level between each track (Gamoran, 1990).

For the last dimension of a tracking system's structure, electivity, it was thought that by increasing the electivity of a system, achievement differences would decrease between tracks. This hypothesis could not be supported (Gamoran, 1990).

Our research uncovered mixed results concerning the effects of ability grouping on achievement. Specific conclusions are reserved for the concluding summary section. The next section addresses the role self-concept plays in the effect of ability grouping on student performance.

Self-Concept

In our review of studies examining the effects of tracking on secondary students, we found that self-concept

is a variable that deserves consideration. Self-concept is the self-evaluation of a student's abilities in comparison to his/her other classmates. Student self-concepts depend on their comfort and deftness with social comparison processes. Self-concept not only reflects how students rate their abilities by social comparison to other classmates, but it also includes their self-esteem, the way they feel about themselves. Ability grouping and tracking practices have a strong effect on self-concept as the level or group a student is placed affects the variables with which he/she may gauge his/her own performance and ability.

For secondary students, their self-concept does relate to their group placement. In homogeneous systems, high-ability students rate high levels of self-concept, while the low-ability students exhibited lower levels of self-concept (Byrne, 1988; Reuman, 1983; Spenser & Allen, 1988). A study following sophomores to their senior year found that their self-concept remains constant for academic tracks (high-ability students) and regular tracks (average-ability students), but self-concept declines for the vocational-tracked student (low ability) (Vanfossen, Jones & Spade, 1987).

In heterogeneous classes of English and social studies, secondary students experience higher degrees of self-concept and self-esteem. Compared to the homogeneous classes, teachers, who in this study were teaching to mixed-ability

groups for the first time, perceived elevated levels of self-concept and self-esteem from their average and lower students (Poppish & Others, 1990).

Low-tracked students in eleventh and twelfth grade academic classes frequently compared their abilities to the students in high tracks and the low-track students did see themselves as less capable (Byrne, 1991; Reuman, 1983; Vanfossen & Others, 1987). However, in general curriculum classes, the low-tracked students used social comparison processes less and placed less emphasis on academic skills. In these classes, it was found that knowledge was not as important as popularity with peers (Byrne, 1991).

Social comparison processes are an important mediator of the relationship between ability grouping and self-concept. In a study of ninth-grade mathematics classes, within-class grouping for high and average groups positively affects the self-evaluation for those students because of the way they compare themselves to the ability of the other students in their class. The low-ability group demonstrated lower levels of self-concept, as they saw that their math abilities did not equal the other groups in the classroom. The high-ability students compared themselves to students who were less mathematically capable and rated their own abilities high (Reuman, 1983).

In contrast, the self-concept for between-class grouped students related to the ability group in which the students

were placed, i.e. high-ability students had high degrees of self-concept, average ability had average degrees of self-concept and low-ability students saw themselves as having poor math abilities (Reuman, 1983).

Reuman's study (1983) also found that gender plays a role in students' self-concept. Unlike boys, girls are reluctant to compare themselves academically to others. For these students, who do not use social comparison, their group level strongly relates to their self-concept of their math abilities.

The effects of grouping on gifted students' self-concept showed no significant differences between heterogeneous and homogeneous classes. One of the mythical proponents for gifted classes is that specialized classes will benefit gifted students' self-concept. However, gifted students in homogeneous, specialized classes do not exhibit higher degrees of self-concept than gifted students in heterogeneous, mixed-ability classes (Goldring, 1991).

When looking at the impact homogeneous grouping versus heterogeneous grouping has on students' self-concept, it is important to consider the findings as they pertain to high, average and low achievers in heterogeneous, between-class grouping and within-class grouping. It would be deceiving to generalize the results of heterogeneous versus homogeneous grouping for all students without looking at these finer breakdowns.

Expectancies & Attitudes

Expectancies, as defined in this paper, are the hopes and ideas students as well as teachers bring with them into a classroom, or to a lesson on how they will succeed, and what they expect to learn. It is argued that tracking and ability grouping contribute to the inequality of education by varying student expectancies for successful performance and their attitudes towards school (Oakes, 1985). In her 1985 study of 25 high schools and 25 junior high schools, Oakes found that high-track students have higher expectations for successful performance, while low track students tend to feel more alienated from their school's educational demands and further educational opportunities. As we examined the body of current research on ability grouping for its effect on student expectancies and attitudes, we found that much of the literature did not take into consideration expectancies or attitudes as variables.

A study of ninth and tenth grade English and social studies classes showed that students of average and high abilities had more positive expectancies for their heterogeneous classes and their learning activities as compared to their homogeneous counterparts. As the expectancies of the heterogeneous students increased so did their motivation to learn. In this study, the heterogeneous classes were tried for the first time in this school, which had previously grouped homogeneously using between-class groups (Poppish & Others, 1990).

Teacher expectancies play a part in the impact of ability grouping. In high school history classes, a study found that teachers have lower expectancies for their low-ability students (Muskin, 1990). This type of teacher expectancy manifests itself in the way teachers prepare for low-ability students. Granted they must take into consideration the lower abilities of these students, but these classes resulted in higher rates of non-instructional time. Low ability history classes were also marked with a low or non-frequency of critical thinking skills, which are skills teachers seem to reserve for their high-ability students. One author (Muskin, 1990) suggests that critical thinking skills are taught at a higher frequency to the higher ability students because teachers expect high-ability students to be more prepared to handle that kind of knowledge.

Achievement expectancies were measured for sixth graders in mathematics in a 1983 study. The achievement expectancies are a combination of self-concept of math ability, expectation for success in math, and the perception of math as an easy subject. Similar to self-concept, Reuman found that within-class grouping accentuated the sixth grade high-achievers' positive perceptions and the low-achievers' negative expectancies. This was because higher ability students tended to make downward comparisons and the low-ability students made upward comparisons (Reuman, 1989).

This study's results for between-class grouping found that homogeneous grouping both raised and lowered the achievement expectancies for both high and low-ability students. The grades received by the students in this study corresponded to their expectancies. The high-achievers in within-class grouping received higher grades than their between-class counterparts. Just as their achievement expectancies were low, the grades of the low-achievers received in the within-class grouping were lower than the low-ability students' grades in the between-class grouping. This study did not exclude the average learners. It found that there was no difference for the achievement expectancies of the average-ability students for either within or between-class grouping (Reuman, 1989).

The practice of ability grouping can affect students' attitudes as well as their expectations. In a 1983 study on high and low achieving sophomores and seniors, it was found that the high-achievers' attitudes were more positive in the homogeneous math and English classes, while for the low-achievers, the heterogeneous classes had a more positive impact on their attitudes. In comparing equivalent high-achieving sophomores and seniors from heterogeneous classes with the homogeneous, advanced classes, the study learned that the high-achieving, homogeneous students scored higher in positive attitudes toward subject, self and school. For low-achieving sophomores, positive attitudes

toward subject and self were stronger for the mixed-ability students. The homogeneous, remedial class exhibited increased signs of dread toward their subject. As for the seniors, there was no significant difference between their attitudes for subject, self and school for either mixed or homogeneous classes. However in the subject of math, the mixed ability low-achieving seniors scored slightly higher in their attitudes toward the subject (Newfield & McElyea, 1983).

From these studies, it seems that the higher the grade, the less the practice of ability grouping plays in the effect on expectancies and attitudes (Newfield & McElyea, 1983; Reuman, 1989). Nevertheless, for middle school and early high school, expectancies and attitudes are important aspects of ability groupings' impact on student performance (Gamoran, 19990; Reuman, 1989). Their role with achievement reinforces the importance of considering expectancies and attitudes when analyzing the impact of ability grouping.

Socioeconomic Status Maintenance

In this section we will discuss the influence that socioeconomic status has on ability grouping. Some researchers have found (Jones, Vanfossen & Spade, 1987; Goodland & Oakes, 1988; Oakes, 1986; Vanfossen & Others, 1987) that students' ethnic backgrounds and/or economic status highly influences their track placement. These

researchers believed that while ability was an important predictor of placement, it alone did not determine which ability level a student was placed during his or her high school education.

Oakes (1986) traced the history of splitting students into groups destined for further academic studies and others for vocational endeavors, back to the turn of the century. In the early 1900's there was an influx of immigrants and emancipated blacks seeking education in the public schools. The leaders in education decided that the best education for these new students would be one which trained them for work, one that would help them to make a living. Accordingly, many researchers (Jones & Others, 1987; Goodland & Oakes, 1988; Oakes, 1986; Vanfossen & Others, 1987) today have found that not much has changed. Students of higher socioeconomic backgrounds are typical of the academically or high-tracked ability groups whereas minorities and the poor are disproportionately placed in general or vocational tracks.

Tracking assignments are generally based on standardized test scores and teacher/counselor judgment. Standardized-test bias and teacher/counselor prejudice may account for the disproportionate placement of poor and minority students in low-tracked classes (Oakes, 1985).

Jones & Others (1987) included in their research the placement of students into academic tracks based on their

socioeconomic backgrounds. They used statistics from a 1980 data base entitled the "High School and Beyond Study." The sample of subjects used in their study included those seniors of 1982 who had remained in the same track they had been placed as sophomores in 1980. They found that the higher the amount of inclusiveness (the availabilities of future educational options), the smaller the effect that students' socioeconomic backgrounds had on their location in an academic track. Additionally, the lesser the amount of inclusiveness, the smaller were the social class differences among students in the vocational and general tracks.

Oakes (1986) looked at the effects of placing students into academic versus vocational tracks. She was concerned about her findings on the large percentage of minorities in the vocational programs and found that these programs taught low-level skills for low-level jobs that are in danger of early obsolescence. In contrast, her research showed that a large percentage of white students in the academic tracks were learning the problem-solving skills needed in preparation for the workplace of the future rather than learning skills for bygone jobs of the past.

The reason we use the term "status maintenance" is because as long as minorities and the poor typify students in vocational or low-level ability groups, schools will continue to limit these students' access to lower skill levels than their higher-tracked peers (Oakes, 1986). The

findings overwhelmingly confirm that the socioeconomic status and ethnic backgrounds of students influence their track placements.

Opportunities for Learning

In this section we equate opportunities for learning with equal access to quality education. Opportunities for learning include the amounts of instruction time and homework given, the curricular content taught, the materials used, the activities engaged in, and teacher presentation. These factors are compared in the ability groups of high, medium and low to decide if each group is receiving comparable opportunities for learning and if not, what are the differences. Of the research that discussed opportunities for learning included in our report (Gamoran, 1990; Goodland & Oakes, 1988; Lake, 1988; Muskin, 1990; Oakes, 1985; Sorenson & Hallinan, 1986; Trimble & Sinclair, 1987), all agreed that inequalities existed when any kind of ability grouping was used.

All of the authors focused on between-class ability grouping except for Sorenson and Hallinan (1986) who discussed within-class ability grouping. First discussed will be the studies researching between-class grouping. Following this the Sorenson and Hallinan study (1986) will be discussed to focus on within-class findings.

The following briefly describes the between-class

research studies included in this section. Trimble and Sinclair (1987) studied the differences in the curricular content and instructional methods of U.S. history classes across the three ability groups in six Massachusetts high schools. Muskin's research (1990) also used U.S. history classes from six high schools to study the differences in opportunities for learning in honors, regular and basic classes. Both Goodland and Oakes (1988), Lake(1988), and Oakes (1986) presented a summary of findings from previous research. All of these authors agree on the following findings.

A higher percentage of time was devoted to instruction, time on task and homework in the higher-tracked classes than in the lower tracks. High-tracked, college-bound instruction emphasized analysis and critical-thinking skills, while non-college bound instruction concentrated on rote memory and low-level knowledge skills (Goodland & Oakes, 1988; Lake, 1988; Muskin, 1990; Oakes, 1986; Trimble & Sinclair, 1987). In many cases teachers in low-ability classes spent more time controlling behavior problems which resulted in decreased learning time, than did teachers of high-ability classes (Muskin, 1990; Oakes, 1986; Trimble & Sinclair, 1987).

Trimble and Sinclair (1987) also talked about the affective goals of the U.S. history classes. Affective goals as they apply to U.S. history describe teachers'

efforts to develop a sense of broadened feelings for the humanities and cultivate a desire to become good citizens. The affective domain does not concentrate on the memorization of facts and figures, rather it develops an appreciation for what students are learning and how it applies to their daily lives. This can be generalized to all school subjects. There was a disparity in the time devoted to affective goals between the high-ability classes and the low and average classes. The high-ability classes spent more time pursuing affective goals while the low and average classes spent more time on the memorization of facts (Trimble & Sinclair, 1987).

Findings concerning teacher expectations explained in another section of this paper seemed to impact on the opportunities for learning. Some teachers enjoyed teaching the higher ability classes more than the lower ability ones and consequently this was reflected in their clarity of presentation, task orientation, enthusiasm, effective use of materials and the variety of activities planned for their classes. Teachers of higher ability classes demonstrated a higher level of all of the characteristics just mentioned than the teachers of lower grouped classes (Lake, 1988; Oakes, 1986 Trimble & Sinclair, 1987).

While the above results referred to between-class grouping, Sorenson and Hallinan's (1986) research study concentrated on within-class grouping in upper elementary

and middle school grades. They found that because a teacher's instructional time was divided between three ability groups, there was less opportunity for learning because there was less direct instructional time devoted to each group. While these grouped students in heterogeneous classrooms may have received less direct teacher instruction, the instruction they did get may have provided for more learning. Students were taught in smaller groups and instruction was adapted to their abilities. Small, homogeneous groups rather than one large heterogeneous group facilitated learning.

Both Gamoran (1990) and Oakes (1985) researched the effects of tracking on student and educational outcomes. These researchers found that there were content differences between high and low-tracked classes. In school, students can only learn to what they are exposed. Oakes (1985) writes "Yet it is clear from the research on tracking that the practice constitutes a government action that restricts students' immediate access to certain types of education and to both educational and occupational opportunities in the future" (p.189).

Whether or not the same content was available in each track level, the differences in amount of time devoted and the instructional mode used, directly affected what students learned (Gamoran, 1990; Oakes, 1985). It is clear from the studies cited in this section that inequalities regarding

opportunities for learning do exist when tracking or ability grouping is used.

Conclusions and Recommendations

The studies and articles reviewed for this paper rarely agreed on the benefits or harmful effects of ability grouping. The balance of our evidence does suggest that grouping affects achievement, self-concept, expectancies and attitudes, and opportunities for learning. While these four issues are affected by grouping, ability grouping is affected by socioeconomic status. What follows is a summary of the effects we believe should be considered.

Due to the inconsistencies found by researchers on the topic of achievement when comparing the effects from homogeneous versus heterogeneous classes, we will attempt to briefly highlight the results. One must remember when comparing the effects of heterogeneous and homogeneous classes on achievement, three types of classroom structures are being evaluated: heterogeneous or whole-class instruction, within-class ability grouping, and between-class ability grouping. Generally, findings are different for each structure.

When looking specifically at within-class grouping, we found that high-ability groups attain a higher achievement than low-ability groups (Reuman, 1989). In comparison to heterogeneous grouping, within-class grouping and

cooperative-learning groups are more beneficial to achievement (Slavin & Karweit, 1984).

In the consideration of between-class ability grouping, widely used in secondary schools (Slavin, 1990), low achievers received higher grades and high achievers received lower grades (Reuman, 1989). When comparing between-class grouping to heterogeneous classes, we found that high achievers in advanced-tracked classes showed greater achievement than high achievers in heterogeneous classes (Newfield & McElyea, 1983).

For those studies looking at the effects on achievement for gifted students, we found that the higher the grade level, the more beneficial homogeneous grouping was. Teacher training for those teachers in gifted programs had a direct effect on achievement as well (Goldring, 1990; Kulik & Kulik, 1987).

When studying the effects of between-class grouping on students' self-concepts, we found that a student's self-concept is higher for the average and high-ability students while declining for low-ability students (Vanfossen & Others, 1987; Reuman, 1983). In within-class grouping, the high-ability students have high degrees of self-concept, while the average and lower ability groups experience lower degrees of self-concept (Reuman, 1983). For heterogeneous grouping, secondary students experience higher degrees of self-concept than their homogeneous counterparts (Poppish & Others, 1990).

The expectancies and attitudes of both students and teachers, correlate with their ability placement and assignment respectively (Gamoran, 1990; Muskin, 1990; Oakes, 1985; Reuman, 1989). We found that students' ethnic backgrounds and/or economic status highly influenced their tracking placement (Goodland & Oakes, 1988; Jones & Others, 1987; Oakes, 1986; Vanfossen & Others, 1987).

Consistent throughout our research was that inequalities existed when any kind of ability grouping was used (Gamoran & Berends, 1987; Goodland & Oakes, 1988; Lake, 1988; Muskin, 1990; Oakes, 1986; Sorenson & Hallinan, 1986; Trimble & Sinclair, 1987). Instructional differences among ability groups favored the high-tracked classes and greater learning took place in those classes (Gamoran & Berends, 1987; Lake, 1988; Muskin, 1990; Oakes, 1986; Trimble & Sinclair, 1987). Sorenson and Hallinan (1986) stated that small, homogeneous groups rather than one large heterogeneous group facilitates learning. While they were referring to within-class ability grouping, it is our guess that small groups of any kind, whether they be homogeneous or heterogeneous in nature are more beneficial to student performance.

In short, ability grouping is a controversial topic that elicits strong feelings from both sides. Along with the emotionally charged opinions, we found that evidence used by the studies to support the researchers' conclusions were often conducted well before 1970, some dating as far back as

the 1920's. We were clearly dismayed at the small amount of studies on heterogeneous ability grouping. Our guess is that the wide acceptance of ability grouping as the preferred method of stratification, dominates secondary educational practices. We were also disappointed at the small amount of actual studies on ability grouping conducted at the ninth through twelfth grades.

In sum, ability grouping is not necessarily harmful, but the practice of ability grouping unsupported by an overall educational purpose can lead to unclear effects on student educational outcomes.

From our review, we recommend that any school seeking to reevaluate their grouping system should take into consideration their student body composition, the purpose of ability group placement and the desired educational outcomes. Before adopting any ability-group method, one needs to consider their school's commitment to teacher training, ability to support staff and the benefits of the employment of cooperative learning as an instructional method (DuFour & Schwartz, 1990; Lake, 1988; Oakes, 1985; Slavin & Karweit, 1984).

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